

WHAT IS CLAIMED IS:

1. A snowmobile having a four-cycle engine mounted on a front body thereof and enclosed by an engine hood located in front of a seat, characterized in that the four-cycle engine is mounted in such a manner that the crankshaft is arranged along the body width direction and the central axis of a cylinder(s) is tilted rearward with respect to the vertical direction of the snowmobile body, forming a rear tilted engine; at least part of the engine intake system including an air cleaner box and throttle body, located over the engine and connected to the intake port(s) at the rear part of the cylinder head is accommodated in the topmost space of the engine hood; and exhaust is led out to the front of the cylinder(s) by an exhaust system connected to the exhaust port(s) of the front part of the cylinder head.

2. The snowmobile equipped with a four-cycle engine according to Claim 1, wherein the engine hood has an upward projected portion formed at top thereof, a headlight is disposed at the front of the projected portion and an instrument panel for indicating the condition of the vehicle at the rear of the projected portion, and at least part of the intake system is accommodated in the space sandwiched between the headlight and instrument panel in the projected portion.

3. The snowmobile equipped with a four-cycle engine according to Claim 1, wherein the exhaust system includes an exhaust manifold connected to the exhaust port(s) at the front of the cylinder head and an exhaust muffler located in front of the engine and connected to the exit of the exhaust manifold by an exhaust pipe, both being arranged inside the engine hood, and the exhaust system further has an exhaust lead path from the muffler, with an opening formed in the body bottom at the center with respect to the body width so that exhaust will be discharged from the opening to the outside of the snowmobile body.

4. The snowmobile equipped with a four-cycle engine according to Claim 3, wherein the muffler is arranged at a level lower than the engine cylinder(s) and the exhaust pipe from the exhaust manifold is extended frontwards and downwards to the muffler.

5. The snowmobile equipped with a four-cycle engine according to Claim 3, wherein the muffler is of an overall cylindrical shape with its cylinder axis directed along the body width, and exhaust from the engine is led into the muffler via an exhaust pipe that is connected to the muffler at one side with respect to the body width.

6. The snowmobile equipped with a four-cycle engine according to Claim 1, wherein the four-cycle engine is arranged in the engine hood so that the lengthwise center of the crankshaft is off-centered to one side with respect to the 5 center of the body width.

7. The snowmobile equipped with a four-cycle engine according to Claim 6, wherein, in the engine hood, a clutch mechanism is arranged on one side, with respect to the body 10 width, of the engine while a battery is disposed on the other side with respect to the body width.

8. The snowmobile equipped with a four-cycle engine according to Claim 7, wherein electrical equipment is attached 15 to a battery holder for mounting the battery.

9. An intake structure of an engine for a snowmobile wherein a four-cycle engine positioned with its cylinder head at the upper side is provided at the approximate center of an engine 20 room formed in the front body thereof, a steering post equipped with a steering device at the top end thereof for maneuvering the snowmobile is set up in the engine room so that it stands with its steering device side tilted to the rear, characterized in that the engine is arranged in front of the 25 steering post and an intake passage is disposed between the

steering post and the engine body.

10. The intake structure of a snowmobile engine according to Claim 9, wherein an intake manifold constituting part of 5 the intake passage is arranged at the side of the steering post in such a manner that air is supplied to the manifold by downdraft ventilation.

11. The intake structure of a snowmobile engine according 10 to Claim 9, wherein the front body includes an instrument panel at the top and an engine hood in front of the instrument panel, and the engine hood is formed so that it starts at a position stepped down a degree from the front end of the instrument panel toward the front end while a headlight facing 15 outwards and frontwards is arranged at the stepped portion between the engine hood and instrument panel, and a carburetor constituting part of the intake passage is disposed in a space behind the headlight under the instrument panel inside the engine room.

20

12. The intake structure of a snowmobile engine according to Claim 9, wherein the engine is arranged so that the axis 25 of its crankshaft therein is oriented approximately parallel to the body width direction while the carburetor is positioned at a level higher than the cylinder head.

13. The intake structure of a snowmobile engine according to Claim 9, wherein the engine includes an air cleaner box disposed at the rear of a head cover that covers the cylinder head and a first breather hose that connects the interior of the head cover with the interior of the air cleaner box, and the first breather hose is connected at one end to the rear side of the head cover on the drive-clutch side and is extended approximately linearly, and parallel to, the axial direction of the crankshaft, from the drive clutch side to the opposite side and bent perpendicularly, when viewed from top, and further extended and connected at the other end to the air cleaner box.

15 14. The intake structure of a snowmobile engine according to Claim 13, wherein, when the snowmobile body is in its horizontal position, the first breather hose is positioned so that a joint to head cover is lower than another joint to the air cleaner box.

20

15. The intake structure of a snowmobile engine according to Claim 9, wherein the engine includes a second breather hose for connecting the interior of the air cleaner box to the outside of the snowmobile body, and the second breather hose is connected at one end to the bottom of the air cleaner

box and the other end is arranged penetrating through the bottom of the front body and opening to the outside, whereby the water inside the air cleaner box is drained to the outside of the body.